DNS & Network Troubleshooting Cheat Sheet

By DNS Robot — Free Online DNS, SSL & Network Tools

1. DNS Record Types Reference

Every domain relies on DNS records to route traffic, deliver email, and prove ownership. Use DNS Lookup to query any record type across 30+ global servers.

Record	Purpose	Example Value
A	Maps domain to IPv4 address	93.184.216.34
AAAA	Maps domain to IPv6 address	2606:2800:220:1:248:1893:25c8:1946
CNAME	Alias to another domain	www.example.com → example.com
MX	Mail server with priority	10 mail.example.com
TXT	Text data (SPF, DKIM, verification)	v=spf1 include:_spf.google.com ~all
NS	Authoritative nameservers	ns1.cloudflare.com
SOA	Zone authority + serial number	ns1.example.com admin.example.com 2024010101
PTR	Reverse DNS (IP → hostname)	34.216.184.93.in-addr.arpa → example.com
SRV	Service location (port + host)	_sip._tcp.example.com 5060 sipserver.example.com
CAA	Certificate Authority authorization	0 issue "letsencrypt.org"

2. Common DNS Errors & Fixes

When DNS breaks, the error messages can be cryptic. Here are the most common ones with quick fixes. Read detailed guides on the DNS Robot Blog.

Error	Cause	Quick Fix
DNS_PROBE_FINISHED_NXDOMAIN	Domain doesn't exist in DNS	Flush DNS cache, check domain spelling, try 8.8.8.8
DNS_PROBE_FINISHED_NO_INTERNET	No network connectivity	Check Wi-Fi/ethernet, restart router, disable VPN
DNS Server Not Responding	DNS server unreachable or overloaded	Switch to public DNS (1.1.1.1 or 8.8.8.8)
ERR_NAME_NOT_RESOLVED	Browser can't resolve hostname	Clear browser cache, flush DNS, check hosts file
SERVFAIL	Authoritative server failed to respond	Check nameserver health, wait for propagation
REFUSED	DNS server refuses query	Verify server config allows recursive queries
Slow DNS Lookup	High latency to DNS resolver	Use closer resolver, enable DNS over HTTPS

3. Flush DNS Cache (All Platforms)

Platform	Command
Windows 10/11	ipconfig /flushdns
macOS	sudo dscacheutil -flushcache; sudo killall -HUP mDNSResponder
Linux (systemd)	sudo systemd-resolve --flush-caches

Platform	Command
Linux (nscd)	sudo /etc/init.d/nscd restart
Chrome	chrome://net-internals/#dns → Clear host cache
Firefox	about:networking#dns → Clear DNS Cache

4. SSL/TLS Certificate Checklist

Verify your SSL setup with SSL Certificate Checker. Check certificate chain integrity, expiration, and protocol support.

Check	What to Verify	Common Issue
Certificate Valid	Not expired, matches domain	Expired cert → browser warning
Chain Complete	Root → Intermediate → Leaf	Missing intermediate → mobile fails
Protocol	TLS 1.2+ enabled, SSL 3.0 disabled	Old TLS → security vulnerability
HSTS Header	Strict-Transport-Security present	Missing → downgrade attacks possible
Mixed Content	No HTTP resources on HTTPS page	Mixed content → padlock warning
CAA Record	Restricts which CAs can issue certs	Missing → any CA can issue

5. Email Authentication (SPF, DMARC, DKIM)

Verify your email security with SPF Checker, DMARC Checker, and DKIM Checker.

Protocol	DNS Record	Example	Purpose
SPF	TXT on root domain	v=spf1 include:_spf.google.com ~all	Authorize mail senders by IP
DKIM	TXT on selector._domainkey	v=DKIM1; k=rsa; p=MIIBIjANBg...	Cryptographic signature per email
DMARC	TXT on _dmarc subdomain	v=DMARC1; p=reject; rua=mailto:d@example.com	Policy for SPF/DKIM alignment
BIMI	TXT on default._bimi	v=BIMI1; l=https://example.com/logo.svg	Brand logo in email clients

DMARC Policy Levels: p=none (monitor only) → p=quarantine (spam folder) → p=reject (block delivery)

6. Network Diagnostic Commands

Run these directly in your browser: Ping, Traceroute, Port Checker.

Tool	Command	What It Shows
Ping	ping -c 10 example.com	Latency, jitter, packet loss
Traceroute	traceroute example.com	Network path, hop-by-hop latency
Port Check	nc -zv example.com 443	Whether a TCP port is open
DNS Query	dig example.com A +short	DNS record value
Reverse DNS	dig -x 93.184.216.34	Hostname from IP (PTR record)
WHOIS	whois example.com	Registrar, dates, nameservers
HTTP Headers	curl -I https://example.com	Response headers, status code
SSL Check	openssl s_client -connect example.com:443	Certificate details, chain, expiry

7. HTTP Status Codes Quick Reference

Code	Name	Meaning
200	OK	Request succeeded
301	Moved Permanently	URL permanently redirected (passes SEO)
302	Found	Temporary redirect (does not pass SEO)
304	Not Modified	Cached version is still valid
400	Bad Request	Malformed request syntax
401	Unauthorized	Authentication required
403	Forbidden	Server refuses access
404	Not Found	Resource does not exist
429	Too Many Requests	Rate limited
500	Internal Server Error	Server-side crash or misconfiguration
502	Bad Gateway	Upstream server sent invalid response
503	Service Unavailable	Server overloaded or in maintenance

8. Common Network Ports

Test port connectivity with Port Checker.

Port	Protocol	Service
21	TCP	FTP (File Transfer)
22	TCP	SSH (Secure Shell)
25	TCP	SMTP (Email sending)
53	TCP/UDP	DNS
80	TCP	HTTP
110	TCP	POP3 (Email retrieval)
143	TCP	IMAP (Email retrieval)
443	TCP	HTTPS (SSL/TLS)
465	TCP	SMTPS (SMTP over SSL)
587	TCP	SMTP Submission (STARTTLS)
993	TCP	IMAPS (IMAP over SSL)
3306	TCP	MySQL
5432	TCP	PostgreSQL
8080	TCP	HTTP Alternate / Proxy

9. Security Headers Checklist

Analyze your headers with HTTP Headers Check.

Header	Recommended Value	Protects Against
Strict-Transport-Security	max-age=31536000; includeSubDomains	SSL stripping, downgrade attacks
Content-Security-Policy	default-src 'self'; script-src 'self'	XSS, code injection
X-Content-Type-Options	nosniff	MIME type sniffing

Header	Recommended Value	Protects Against
X-Frame-Options	DENY	Clickjacking
Referrer-Policy	strict-origin-when-cross-origin	Referrer data leakage
Permissions-Policy	camera=(), microphone=(), geolocation=()	Unauthorized API access

10. Public DNS Resolvers

Provider	Primary IPv4	Secondary IPv4	DNS over HTTPS
Cloudflare	1.1.1.1	1.0.0.1	https://cloudflare-dns.com/dns-query
Google	8.8.8.8	8.8.4.4	https://dns.google/dns-query
Quad9	9.9.9.9	149.112.112.112	https://dns.quad9.net/dns-query
OpenDNS	208.67.222.222	208.67.220.220	https://doh.opendns.com/dns-query
AdGuard	94.140.14.14	94.140.15.15	https://dns.adguard.com/dns-query
Control D	76.76.2.0	76.76.10.0	https://freedns.controld.com/p0

All tools are free at dnsrobot.net — 53 DNS, SSL & network tools, 12 languages, no signup required.

DNS Lookup · SSL Checker · WHOIS · SPF/DMARC/DKIM · Ping · Traceroute · Port Checker · IP Lookup · QR Generator · Password Generator & more

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